

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A wheelchair ramp assembly, comprising:
 - (a) a platform mounted to a vehicle having a floor, the platform reciprocally mounted to the vehicle to reciprocate the platform between a raised position, wherein the platform is substantially flush with the floor, and a recessed position;
 - (b) a ramp having a weight, the ramp coupled to a reciprocating mechanism for selective actuation between a deployed position and a stowed position in response to a force, wherein when the ramp is in the stowed position, the platform is in a plane located below the floor; and
 - (c) a counterbalance assembly cooperatively coupled to the ramp to counterbalance the weight of the ramp during actuation of the ramp between the deployed and stowed positions to reduce the force required to reciprocate the ramp between the deployed and stowed positions.
2. The wheelchair ramp assembly of Claim 1, wherein the platform is mounted to the vehicle by a frame.
3. The wheelchair ramp assembly of Claim 1, further comprising a preload assembly coupled to the counterbalance assembly, the preload assembly adapted to selectively apply a load to the counterbalance assembly to assist in reciprocating the ramp between the deployed and stowed positions.
4. The wheelchair ramp assembly of Claim 1, wherein the counterbalance assembly further comprises a torsion assembly having a rotating end and fixed end.
5. The wheelchair ramp assembly of Claim 4, wherein the torsion assembly comprises a torsion rod extending between the rotating and fixed ends of the torsion assembly.
6. The wheelchair ramp assembly of Claim 5, wherein the weight of the ramp causes the torsion rod to twist about the fixed end of the torsion assembly when the ramp is reciprocated between the deployed and stowed positions to resist the weight of the ramp.

7. The wheelchair ramp assembly of Claim 6, wherein the counterbalance assembly further comprises an actuating arm rotatably attached to the torsion assembly and first and second bearing surfaces cooperatively coupled to the ramp, wherein the first and second bearing surfaces move in a predetermined path as the ramp reciprocates between the deployed and the stowed positions to contact a portion of the actuating arm and cause the torsion rod to twist.

8. The wheelchair ramp assembly of Claim 7, wherein one end of the actuating arm includes a cammed surface, wherein the cammed surface is positioned for engagement with at one of the bearing surfaces, such that as the ramp is reciprocated between the deployed and stowed positions, at least one of the bearing surfaces engages a portion of the cammed surface, thereby twisting the torsion rod to counterbalance the weight of the ramp.

9. The wheelchair ramp assembly of Claim 8, further comprising a preload assembly coupled to the torsion assembly, the preload assembly twists the torsion rod from a neutral position to assist in reciprocating the ramp between the deployed and stowed positions.